

Notice of Allowability

Application No.

10/812,817

Examiner

Richard A. Rosenberger

Applicant(s)

SOME, DANIEL I.

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 5/12/2005.
2. ☒ The allowed claim(s) is/are 1-11, 13, 14 and 16-50.
3. ☒ The drawings filed on 29 March 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 4/4/2005
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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1. The following is an examiner's statement of reasons for allowance:

2. As set forth in the previous office action, the art does not teach or suggest the use a probe beam in the overall combination of claims 16 and 17, and claim 25 as amended. Claim 49 claims the illumination of the top surface with a beam of electromagnetic radiation "when at least one of the hot image and cold image are imaged". The remarks filed 12 May 2005 present this language as being direct to the probe beam, stating that the heat may be applied in any manner (remarks, page 16, line 13) and the claim 49 should be allowable "for reasons similar to claim 16", which claims, and is allowable because of, the probe beam. The claimed possibility of the beam being applied during the imaging of the cold image in claim 14, particularly coupled with the comments in the remarks, distinguish the illumination of the surface by the electromagnetic radiation from a heating beam as in Crisman, , Adams et al, and Shepard (see below for comments concerning the latter two references). This, claim 49 is allowable for the reasons set forth in the previous office action for claims 16 and 17.

3. Claim 1 has been amended to recite a method for testing a semiconductor wafer with conductive lines and vias thereon, and that the heating and cooling is "repeated multiple times in a second", which goes beyond the general teaching of the references as applied in the previous office action, which is note directed to such a sample not discloses the claimed rapidity of the heating and cooling cycle.

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4. Adams et al (US 4,854,724) and Shepard (US 6,585,146) both show related thermographic tests in which the object being tested is heated and images of the surface are used to detect defects. Both teach the art-recognized equivalence of heating from the front and the rear; compare figures 1 and 2 of Adams et al and figures 1 and 2 of Shepard. Neither tests patterned semiconductor wafers, and neither teaches the heating and cooling cycle of "multiple times a second" as now in claim 1.

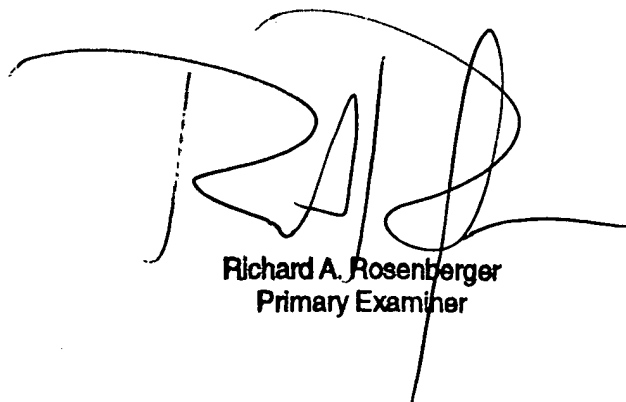
5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A Rosenberger whose telephone number is (571) 272-2428. The examiner can normally be reached on Monday through Friday during the hours of 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. A. Rosenberger
22 July 2005



Richard A. Rosenberger
Primary Examiner